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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS R. COLLIGAN and GREGORY A. WEIR

Appeal 2008-3089
Application 09/727,667¹
Technology Center 2100

Decided:² April 22, 2009

Before LEE E. BARRETT, JEAN R. HOMERE,
and ST JOHN COURTENAY III, *Administrative Patent Judges*.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ Filed on December 01, 2000. The real party in interest is Dell Products, L.P.

² The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1, 2, 4 through 10, 12 through 18, 20 through 24, and 30 through 36. Claims 3, 11, 19, and 25 through 29 have been canceled. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

Appellants' Invention

Appellants invented a graphical user interface (GUI) in a computer for allowing a user to selectively adjust the acoustic level of the computer hard drive to thereby reduce the noise level therein. (Spec. 2: 6-10.) As depicted in the GUI (200) of Figure 2, upon the user selecting with the help of a mouse a desired acoustic level by adjusting a level of indicator (204) in an acoustic level bar (202), a dial (206) indicates in percentage the selected acoustic level. (*Id.* at 3: 21-26.) As shown in Figure 3, the user can then perform a pre-test to determine the current computer settings including hard drive seek settings, acoustic level and power management level (e.g. fan speed, CPU/bus) associated with each of the settings. (*Id.* at 3: 28- 4: 4.) Thus, by adjusting the acoustic level of the hard drive (e.g. decreasing noise level of hard drive), the power management level in the computer (100) is also adjusted in a similar fashion to improve the overall performance of the computer (e.g. decrease the speed of cooling fan to a minimum in order to reduce the heat production in the computer). (*Id.* at 4: 7-20.) Subsequently, the user can perform a post-test to preview the performance of the computer

at the new settings, and to determine if additional adjustments are deemed necessary. (*Id.* at 5: 4-10.)

Illustrative Claim

Independent claim 1 further illustrates the invention. It reads as follows:

1. A method of providing acoustic management in a computer comprising:
 - receiving from a user instructions regarding a selected acoustic level via an interface;
 - using an acoustic level bar and a computer input device for selecting a desired acoustic level;
 - a dial indicating, as a percentage of a maximum possible acoustic level, the acoustic level selected;
 - performing a pre-test to determine current hard disk drive seek settings and current system settings in the computer, the hard disk drive including a plurality of preset seek profiles, each having a known acoustic level, the system settings determining a power management level;
 - adjusting an operational level of at least one subsystem of the computer to achieve the selected acoustic level including adjusting a seek time of the hard disk drive of the computer;
 - making corresponding adjustments by at least one power management system in the computer; and
 - performing a post-test to determine if further adjustment is desired.

Prior Art Relied Upon

The Examiner relies on the following prior art as evidence of unpatentability:

Singer

US 6,314,473 B1

Nov. 6, 2001
(filed Mar. 4, 1999)

Funches	5,305,160	Apr. 19, 1994
Stancil	US 6,601,168 B1	Jul. 29, 2003
		(filed Nov. 19, 1999)

Rejection on Appeal

The Examiner rejects the claims on appeal as follows:

Claims 1, 2, 4 through 10, 12 through 18, 20 through 24, and 30 through 36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Singer, Funches and Stancil.

Appellants' Contentions

Appellants argue that the combination of Singer, Funches and Stancil does not render independent claim 1 unpatentable. (App. Br. 7-8, Reply Br. 4-5.) In particular, Appellants argue that while Singer discloses a GUI that provides the user with controls for adjusting the noise level and the power consumption level of the computer, the disclosed controls are independent from each other. (*Id.*) Appellants contend that the disclosed adjustment to the power consumption level emanates from the inverse relationship between seek time and power consumption, whereas the claimed adjustment to the operational level of the subsystem is made by the power management system in the computer. (Reply Br. 4.) Further, Appellants argue that the proffered combination does not teach performing a post-test to determine if further adjustment is desired. (Appeal Br. 8, Reply Br. 5.) Additionally, Appellants argue that Stancil does not teach changing the fan speed as a way

to reduce the noise level in the computer. Therefore, Appellants submit that there is insufficient rationale to combine the teachings of Singer and Stancil to render the claimed invention unpatentable. (*Id.*)

Examiner's Findings/Conclusions

The Examiner finds that Singer's disclosure of adjusting the seek time, the noise level, and power consumption level when a user alters a configuration level in a GUI teaches the adjustments recited in independent claim 1. (Answer 9-10.) Further, the Examiner finds that Stancil's disclosure of adjusting the fan speed in a processor to regulate the computer temperature complements Singer's disclosure to teach the limitation of adjusting the fan speed to achieve a selected acoustic level. (*Id.* at 10-13.) Therefore, the Examiner concludes that one of ordinary skill in the art would have found sufficient rationale to combine the teachings of Singer, Funches, and Stancil to render the claims pending herein unpatentable. (*Id.*)

II. ISSUE

Have Appellants shown that the Examiner erred in concluding that the ordinarily skilled artisan would have found sufficient rationale to combine the disclosures of Singer, Funches, and Stancil to teach a power management system that makes corresponding adjustments in a computer upon determining that the acoustic level including the seek time of the computer hard drive has been adjusted, as recited in independent claim 1?

III. FINDINGS OF FACT

The following findings of fact (FF) are supported by a preponderance of the evidence.

Singer

1a. Singer discloses a GUI for allowing a user to alter computer settings to control the noise level, the seek time, and the power consumption of a disk drive. (Col. 6, ll. 37-45.)

1b. As shown in Figure 4, Singer discloses a sliding bar (30) for driving along a continuum the seek time inversely with the noise level of the computer hard drive. Particularly, as the noise level increases the seek time decreases, and vice versa. (Col. 6, l. 62- col. 7, l. 5.)

1c. Singer also includes another controller (44) that can cause the computer hard drive to enter the power saving mode, which may be set in conjunction with varying the seek time and the noise level. (Col. 7, ll. 53-67.)

1d. As shown in Figure 6, Singer discloses a hybrid controller for varying the power consumption inversely with the seek time of the computer hard drive. (Col. 8, ll. 9-19.)

1e. Additionally, Singer discloses a preview controller (54) that causes the computer hard drive to enter a preview mode to cause the user to experience the noise level and seek time settings in the GUI. It further allows the user to revise GUI inputs and to preview the disk operation based on the newly set inputs. (Col. 33-46.)

Stancil

2a. As shown in figure 2, Stancil discloses a fan controller (26) coupled to a temperature sensor (30) embedded in a CPU to sense the temperature of the CPU (10). Upon reading the CPU temperature, the controller adjusts the speed of the fan in order to keep the CPU temperature sufficiently cool while keeping the background noise level associated with the fan sufficiently low. (Col. 2, ll. 32-35, col. 4, ll. 43-49, l. 66- col. 5, l. 3.)

2b. Stancil discloses that the fan controller (26) is connected to a south bridge (24) via an SMBUS (28) while the CPU (10) is connected to a north bridge (14) via a CPU BUS (16). As shown in Figure 3, the SMBUS (28) includes a ramp logic (38) that changes the fan speed register values to correspond to the speed values of the fan. (Col. 3, l. 43- col. 4, l. 53.)

IV. PRINCIPLES OF LAW

Obviousness

Appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

Section 103 forbids issuance of a patent when "the differences between the subject matter sought to be

patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 404 (2007).

In *KSR*, the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior art" and discussed circumstances in which a patent might be determined to be obvious. *Id.* at 401 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966)) (citation omitted). The Court reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* The operative question in this "functional approach" is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 414, 401.

The Federal Circuit recently recognized that "[a]n obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not." *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (citing *KSR*, 550 U.S. at 414). The Federal Circuit relied in part on the fact that Leapfrog had presented no evidence that the inclusion of a reader in the combined device was “uniquely

challenging or difficult for one of ordinary skill in the art” or “represented an unobvious step over the prior art.” *Id.* at 1162 (citing *KSR*, 550 U.S. at 418).

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. *See In re Kahn*, 441 F.3d at 987-988; *In re Young*, 927 F.2d 588, 591 (Fed. Cir. 1991); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Moreover, in evaluating such references it is proper to take into account not only the specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. *In re Preda*, 401 F.2d 825, 826 (CCPA 1968) (citation omitted).

V. ANALYSIS

Claims 1, 2, 6, 8, 9, 10, 14, 16, 17, 18, 22, 30, and 31

Independent claim 1 recites in relevant part a power management system that adjusts settings in a computer upon determining that the acoustic level including the seek time of the computer hard drive has been adjusted. As set forth in the Findings of Fact section, Singer discloses a controller for varying the noise level inversely with the seek time of a computer. (FF 1b.) Singer also discloses another controller for varying the power consumption inversely with the seek time of the computer. (FF. 1d.) Further, Singer

discloses that the power consumption can be automatically adjusted when the seek time, or the noise level of the computer are adjusted. (FF. 1a, 1c.) We find that Singer teaches upon the user adjusting the noise level and seek time of the computer, the power consumption parameters can also be adjusted automatically. We also find that one of ordinary skill would readily appreciate that such automatic adjustment of the power consumption would be made by the power management system in the computer in accordance with customary power saving practices in the computer art.

Additionally, Stancil discloses adjusting the speed of a CPU fan to thereby reduce the noise level associated with the fan and the temperature of the CPU. (FF. 2a.) We find that Stancil's teaching of reducing the noise level of a CPU fan would lead to reducing the power consumption in the Singer's computer since Singer discloses a relationship between the reduction of the noise level and the power consumption therein. We therefore find that both Singer and Stancil disclose prior art elements that perform their ordinary functions to predictably result in a computer system that automatically reduces the power consumption in a computer upon determining the noise level therein has been reduced. Consequently, we do not agree with Appellants that there is insufficient rationale for combining the teachings of Singer and Stancil.

Additionally, Singer discloses a preview controller for allowing the user to preview current changes as well as further adjustments of the noise level or seek time parameters made in the GUI. (FF. 1e.) We find that the

preview feature of Singer at least suggests performing a post test to determine if further adjustment is desired. It follows that Appellants have not shown that the Examiner erred in concluding that the combination of Singer, Funches, and Stancil renders independent claim 1 unpatentable.

Appellants did not provide separate arguments with respect to the rejection of claims 1, 2, 6, 8, 9, 10, 14, 16, 17, 18, 22, 30, and 31. Therefore, we select independent claim 1 as being representative of the cited claims. Consequently, claims 2, 6, 8, 9, 10, 14, 16, 17, 18, 22, 30, and 31 fall together with representative claim 1. 37 C.F.R. § 41.37(c)(1)(vii).

Claims 4, 5, 12, 13, 20 21, and 32-36

Appellants generally allege that Stancil cannot be properly combined with Singer to teach adjusting the speed of an internal fan in the computer to effectively manage the heat production level of the computer I. (App. Br. 8-9.) We do not agree. As discussed above, we find that Stancil explicitly teaches adjusting the fan speed of CPU to reduce the noise level associated therewith, as well as to reduce the temperature of the computer. We also find that the ordinarily skilled artisan would have found sufficient rationale to combine the known teachings of Stancil and Singer in a familiar way to produce a predictable result. It follows that Appellants have not shown that the Examiner erred in concluding that the combination of Singer, Funches

and Stancil renders claims 4, 5, 12, 13, 20, 21 and 32 through 36 unpatentable.

Claims 7, 15, and 23

Appellants generally allege that neither Stancil nor Singer teaches adjusting the speed of a peripheral bus with corresponding adjustments to the speed of a peripheral device connected to the bus. (App. Br. 9.) We do not agree. As detailed in the Findings of Fact, Stancil teaches an SMBUS that contains logic to adjust its internal registers to correspond to the speed of the CPU fan connected thereto. (FF. 2b.) We find that this disclosure of Stancil fairly and reasonably teaches the cited limitations. It follows that Appellants have not shown that the Examiner erred in concluding that the combination of Singer, Funches and Stancil renders claims 47, 15 and 23 unpatentable.

VI. CONCLUSION OF LAW

Appellants have not shown that the Examiner erred in concluding that claims 1, 2, 4 through 10, 12 through 18, 20 through 24, and 30 through 36 are unpatentable over the combination of Singer, Funches, and Stancil.

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VII. DECISION

We affirm the Examiner's decision to reject claims 1, 2, 4 through 10, 12 through 18, 20 through 24, and 30 through 36.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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